Data Source: **EM CDB** Report Number: GEN-01b

Operations/Field Office: Rocky Flats Print Date: 3/9/2000

HQ ID: 0365 Site Summary Level: **Rocky Flats Environmental Technology Site**

Project RF021 / Building 991 Cluster Closure Project

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

Purpose: The Rocky Flats production mission was formally terminated in 1992 such that routine production operations were no longer required. Efforts have been undertaken in several buildings to begin processing, stabilizing and repackaging the SNM and residue waste to make it safe to store, handle and ship. This effort will continue through approximately 2002. As the effort to stabilize material progresses, and as buildings are no longer required to process and store residue waste and SNM, it is necessary to deactivate and decommission these nuclear and support facilities to further minimize risk, reduce mortgage costs and to fulfill the site closure mission. Buildings not required for SNM, waste storage, economic development and support, will be deactivated, decontaminated, dismantled and demolished. When demolished, the facilities can be formally closed, and remediation of soils under and around buildings will be conducted (as required). The purpose of this project is to accomplish a transition of Building 991 Cluster from an operating nuclear facility and support facilities to a closed and remedied site.

During this transition from an operating SNM facility to a closed site, there are six phased activities. They are listed below and described in the Definition of Scope and Technical Approach sections:

Facility Landlord SNM Removal Operations Deactivation Decommissioning Closure Remediate/Contain High Risk IHSS

The 991 cluster will be used to characterize and store TRU waste prior to disposal at WIPP and provides a location for SNM shipping for the Safe Secure Transport (SST) loading. The 991 cluster is scheduled to be removed from waste management and SNM operations at the end of FY 2003 with the removal of all containerized material. Deactivation, decontamination, decommissioning, demolition, closure and IHSS removal will be done during the period of FY 2003 - FY 2006. In that B991 is (and has been) a containerized storage and shipping building and has no processes or intrusive activities, it is anticipated the deactivation and decontamination efforts are expected to be minor. Closure activities are expected to conclude in FY 2006. While accomplishing the major tasks associated in closure of the 991 cluster is aggressive, the major enabling assumption for this minimal duration is that no isolation of radiological contamination using concrete has occurred in the history of the building.

In addition to SNM shipping, the primary function of the 991 cluster includes TRU waste storage in the Protected Area and characterization (including headspace gas sampling and non-destructive assay). B991 is targeted to be one of only two locations in the PA for containerized TRU waste, including waste generated from residue processing and D&D of other facilities. All containerized waste will be removed as part of waste management practices at the site in PDB 002.

Scope: The scope of this Cluster Closure Project is summarized below for the six major activities. The 991 Cluster Closure Project includes the following buildings: 991, 985, 997, 999, 989, 998, 996, and 984.

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Data Source: EM CDB Report Number: GEN-01b

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Project RF021 / Building 991 Cluster Closure Project

Project Description Narratives

Facility Landlord Functions:

The scope of this element of the project is to provide resources (personnel, material, equipment, etc.) necessary to maintain the facility cluster in a safe, compliant and operable condition. This is typically referred to as the continuing the landlord function to maintain the facility in a condition that allows the tenants or mission work, to perform their required activities. In this case, the facility cluster is referred to as the 991 Cluster and includes Building 991 as well as other associated ancillary structures. Mission work includes TRU (no mixed) waste storage (including storage of packaged pipe overpack components from residue processing), TRU/TRM waste characterization (including headspace sampling and analysis and non-destructive assay), and SNM shipping. The life cycle scope for this WAD is to continue to provide landlord support to the B991 cluster for storage and characterization of TRU waste until the end of residue processing or the year FY 2002, whichever occurs earlier. In addition, as alternative storage locations outside the Protected Area are identified, B991 inventory would be removed to these alternate storage locations to potentially allow for evacuation of B991 earlier than currently planned. SNM shipping is anticipated to be complete (from B991) in FY 99.

SNM Removal Operations:

This element includes the activities necessary to remove SNM in numerous forms, support the elimination of individual storage areas, removal of the Material Access Area, and prepare the facility for deactivation as necessary to achieve incremental steps in mortgage reduction. Once the inventory of SNM is below the threshold determined by Nuclear Materials Safeguards, the Material Access Area will be eliminated. The end state of this element will be achieved when the facility is available for turnover for deactivation.

Deactivation:

The scope of the deactivation phase includes all of the physical activities to prepare and turn over a building cluster to decommissioning as agreed upon in the building specific End State Criteria. This scope also includes all of the prerequisite planning, project management and characterization activities to support the deactivation program (i.e. engineering, planning, scheduling, industrial safety, criticality and nuclear safety, regulatory programs). Specific building deactivation scope includes revision to the authorization basis, removal of excess chemicals, and scanning of the facility to identify areas of surface contamination. The facility currently does not support nuclear material processing except for containerized storage.

Decommissioning:

The scope of the decommissioning phase includes all of the physical activities to decontaminate, dismantle and demolish building clusters in preparation for IHSS remediation and final closure. This scope also includes all of the prerequisite planning, project management and characterization activities to support the decommissioning program (i.e. engineering, planning, scheduling, industrial safety, criticality and nuclear safety, regulatory programs).

Closure:

The scope of this activity includes the final close-out of the cluster site upon completion of decommissioning and IHSS remediation, and includes the regulatory and project close-out documentation required by the Department of Energy and the Rocky Flats Cleanup Agreement (RFCA).

Remediate/Contain High Risk IHSS:

The scope of this activity includes remediation, excavation, or containment as appropriate to close the High Risk IHSSs in the B991 Cluster. The High Risk IHSS removal for 991 cluster includes Under Building Contamination.

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Project RF021 / Building 991 Cluster Closure Project

Project Description Narratives

The activities in this scope are relatively straight forward and can be accomplished on a path similar to a commercial demolition; It is expected very little radiological contamination will be encountered in the removal of this building. The end state for this building is removal of the basement and pad for the building.

Technical Approach: Overall, strategy for closure of the 991 cluster will build on lessons learned from deactivation, deactivation, and decommissioning of other nuclear facilities.

Project Status in FY 2006:

This project will be completed.

Post-2006 Project Scope:

No activities are currently scheduled to occur after 2006 for this project.

Project End State

All buildings will be demolished, and the under building soils and IHSS remediated to site closure standards as identified in RFCA.

Cost Baseline Comments:

Cost estimates are based on assumptions and data developed by the technical groups that have responsibility for managing the work. To the extent practical, all cost estimates are Activity-Based Costs (ABC) and tied directly to a defined and detailed work scope. The estimates are developed at the activity level and are further divided into line items. Line items represent individual resource contributions to activities and are the lowest level of input to the planning system. Once the cost estimate is developed.

each activity is evaluated for cost, technical and schedule risk and the appropriate contingency is determined. Detailed estimates and the basis of estimates (BOEs) for the 2006 Closure Plan are available at the Site.

Safety & Health Hazards:

The principle hazards in the Building 991 Cluster Closure Project are radiological, chemical, and other standard industrial hazards commonly found in Pu Buildings at RFETS. Most of these hazards will exist throughout the project and are related to shipping/drum handling, storage, characterization, hazardous material removal, deactivation, decommissioning, remediation, and demolition. These hazards will be analyzed and categorized in accordance with the RFETS Safety and Health Program infrastructure policies, manuals, and procedures. The B. 991 Cluster will be used as a TRU waste storage and characterization facility until it is ready for closure.

Safety & Health Work Performance:

This project will be completed within the RFETS Safety and Health Program and within the controls and authorization basis documents defined above to ensure the safety and health of the worker, public and the environment. RFETS has implemented an integrated safety management system consisting of the following elements: radiological safety, criticality safety, emergency management, fire safety, industrial hygiene, nuclear safety, occupational medicine, occupational safety, safeguards and security, safety integration, performance oversight, and standards management. RFETS

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HQ ID: 0365 Site Summary Level: **Rocky Flats Environmental Technology Site**

Project RF021 / Building 991 Cluster Closure Project

Project Description Narratives

provides site wide infrastructure programs for each functional area to establish consistent safety standards and support for this project. Safety and health success results from the efficient and effective implementation of these programs. This project is responsible for ensuring that the necessary elements of the safety and health programs are incorporated into the specific project plans and implementing documents, and that an appropriate Readiness Determination and Safety Evaluation Screen (SES)/Unreviewed Safety Question Determination (USQD) have been performed.

This is accomplished through the Integrated Work Control Program (IWCP). Activities are screened using the Activity Screening Process. The screening results in a binning of the activity into a low, medium, or high planning category based on the hazard and uncertainty of the activity and the experience of the project team members. Safety and health subject matter experts provide key support in the planning of the activity to ensure the safety and health of the workers and protection of the public and environment.

PBS Comments:

The 991 cluster will be used to store TRU/TRM waste prior to disposal at WIPP and provide capacity for the Safe Secure Transport (SST) loading and secure storage of other nuclear material. The 991 cluster is scheduled to be removed from waste management and SNM operations at the end of FY03 with the removal of all containerized material and closure of the MAA. Deactivation, decontamination, decommissioning, demolition, and IHISS removal will be done in FY04 and FY05. In that B991 is (and has been) a containerized storage and shipping building and has no processes or intrusive activities, it is anticipated the deactivation and decontamination efforts are expected to be minor. Closure activities are expected to conclude in FY05. While accomplishing the major tasks associated in closure of the 991 cluster in 1 year is aggressive, the major enabling assumption for this minimal duration is that no isolation of radiological contamiation using concrete has occured in the history of the building.

The primary function of the 991 cluster is TRU waste storage in the PA. B991 is targeted to be the only location in the PA for containerized TRU and TRM waste, including waste generated from residue processing and D&D of other facilities. All containerized waste will be removed as part of waste management practices at the site in WPD 04 or WPD 06.

For simplicity of presentation, and due to the total annual funding allocation for the site, the appropriate planning activities for deactivation and D & D is generally displayed at a summary level. When funding levels are determined, and specific annual plans are prepared, it may be necessary to adjust the scopes and budgets for planning the physical activities. However, it should be noted that RFCA and safety concerns dictate that from six months to a year, it is required to prepare, obtain regulatory/public review, etc. prior to beginning physical D & D. The waste volumes listed herein include newly generated waste from deactivation, D & D, and IHSS remediation activities. The volumes do not include wastes routinely generated or wastes from landlord activities which are all contained in Project 2.

Baseline Validation Narrative:

Although the 2006 Closure Plan has not been officially validated, it has undergone a high level review by Rocky Flats Field Office (RFFO) and Headquarter personnel. Current independent validation efforts include the following: 1) RFFO has contracted an independent firm to perform a baseline confidence review of the 2006 Closure Plan by the end of FY99, and 2) the Office of Field Management (FM) has contracted a big-five accounting firm to validate the 2006 Closure Plan.

In addition to the 2006 Closure Plan validation efforts, results/recommendations from several previous baseline validation efforts were used in the development of the 2006 Closure Plan. These validations included: 1) The U.S. Army Corps of Engineers (USACE) performed a validation of the

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Project RF021 / Building 991 Cluster Closure Project

Project Description Narratives

Rocky Flats Ten Year Plan in FY97/FY98, 2) Kaiser-Hill contracted Price Waterhouse Coopers, LLP to conduct and independent validation effort of the 2010 Closure Project Baseline that concluded in May of FY99, and 3) Kaiser-Hill engaged Arthur Andersen, LLP to conduct a schedule and cost risk review of the 2010 Closure Project Baseline.

General PBS Information

Project Validated? Date Validated:

Has Headquarters reviewed and approved project?

No

Date Project was Added:

12/1/1997

Baseline Submission Date:

FEDPLAN Project? Yes

CERCLA RCRA DNFSB AEA UMTRCA Other **Drivers:** State **DOE Orders** Y Y Y Y Y Y Ν N

Project Identification Information

DOE Project Manager: Jessie Roberson

DOE Project Manager Phone Number: 303-966-2263 **DOE Project Manager Fax Number:** 303-966-4775

DOE Project Manager e-mail address: ten.year.plan@rfets.gov

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	48,419	0	48,419	1,110	1,110	1,015	1,015	1,515	1,254	1,522	1,563	2,110	35,428	2,791	111

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Project RF021 / Building 991 Cluster Closure Project

Baseline Costs (in t	thousand	s of dolla	rs)												
	1997-200 Total	6 2007-2 Tota		-2070 otal		ctual 1 1997	998 Act	ual 19 998	99 2000	2001	2002	2003	2004	2005	2006
PBS Baseline (constant 1999 dollars)	43,99	92	0	43,992	1,110 1	,110 1,0	015 1,0	1,51	1,221	1,452	1,460	1,930	31,745	2,449	95
PBS EM Baseline (current year dollars)	48,41	19	0	48,419	1,110 1	,110 1,0	015 1,0	1,51	1,254	1,522	1,563	2,110	35,428	2,791	111
PBS EM Baseline (constant 1999 dollars)	43,99	92	0	43,992	1,110 1	,110 1,0	015 1,0	015 1,51	1,221	1,452	1,460	1,930	31,745	2,449	95
	2007	2008	2009	2010					2036 2035 204		2046- 2050	2051- 2055	2056- 2060	2061- 2065	2066- 2070
PBS Baseline (current year dollars)	0	0	0	0	0	0	0	0	0	0	0 (0 0	0	0	0
PBS Baseline (constant 1999 dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	0	0	0	0	0	0	0	0	0	0	0 (0 0	0	0	0
PBS EM Baseline (constant 1999 dollars)	0	0	0	0	0	0	0	0	0	0	0 (0 0	0	0	0
Baseline Escalation	n Rates														
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		
	0.00%	0.00%	0.00%	2.70%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%		
	2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070		

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Project RF021 / Building 991 Cluster Closure Project

2010 2011-2015 2016-2020 2021-2025 2026-2030 2031-2035 2036-2040 2041-2045 2046-2050 2051-2055 2056-2060 2061-2065 2066-2070

2.10% 2.10% 2.10% 2.10% 2.10% 2.10% 2.10% 2.10% 2.10% 2.10% 2.10% 2.10% 2.10% 2.10% 2.10%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/30/2005

Current Projected End Date of Project: 11/17/2005

Explanation of Project Completion Date Difference (if applicable):

Scope Deletion

Efficiencies

New Scope

New Landlord scope includes services such as Nuclear Safety, Radiological Engineering, Laundry, Facility Management Overhead Support, etc. that were transferred into this PBS from other PBSs.

This change modified the baseline to account for scope, schedule and cost increases associated with:

1) RFFO requirements on revisions to the AB for B991. Extended effort for preparation of a new JCO, revision to the FSAR and implementation to ensure B991operations meet AB requirements. B991 AB had to resemble the B371 BIO. Level of activities for maintaining the safety envelope for the facility increased significantly. HVAC, EGEN and LSDW systems will be defense in-depth systems and required corrective maintenance. Greater procedural controls are to be invoked above those envisioned for a waste storage facility.

Cost Growth

The costs have been revised to be consistent with the Facility Disposition Cost Model that was developed to improve the basis and accuracy of the out year decommissioning cost estimates. This model is based on actual decommissioning costs incurred at Rocky Flats and actual cost data or bottom up estimates from other government and commercial facilities.

Science & Technology

Other

The scope of work and end state conditions for the 2006 Plan are similar to the current 2010 Baseline, with a four-year acceleration and a reduction in cost being the two most significant differences. The bottom-up estimate for the 2006 Plan is a \$1.65 billion improvement over the comparable activity-based bottoms-up detail estimate for 2010.

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Project RF021 / Building 991 Cluster Closure Project

Project Reconciliation

To close the Site four years earlier than the current 2010 Baseline requires a strategically different approach. The two key principles followed in preparing the 2006 Baseline were: 1) safely reducing the urgent risks first, and 2) performing work in a sequence that reduces or eliminates operations, maintenance and security costs (often referred to as - mortgage costs) as early as possible. Key to the 2006 Baseline approach is early closure of the secured Protected Area. Closing the Protected Area as soon as possible means that the high security and maintenance costs for this area can be redeployed to accelerate other closure activities. In addition, D&D and SNM risk reduction activities will be performed simultaneously rather than sequentially, supporting both the risk reduction and mortgage reduction principles. The D&D of non- and lower-contaminated facilities and most environmental remediation work will be deferred until later in the project to allow resources to be focused in the areas that result in the greatest reduction in risks and mortgage costs.

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars): 15,147 Actual 1997 Cost: 1,110 Actual 1998 Cost: 1,015

Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars): 13,022 Inflation Adjustment (2.7% to convert 1998 to 1999 dollars): 352

Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): 13,374

Project Cost Changes

Cost Adjustments Reconciliation Narratives

Cost Change Due to Scope Deletions (-):

Cost Reductions Due to Efficiencies (-):

31 Rebaselining due to acceleration. Efficiencies dollar estimate is not of audit quality.

Cost Associated with New Scope (+):

Cost Growth Associated with Scope Previously Reported (+):

Cost Reductions Due to Science & Technology Efficiencies (-):

Subtotal: 13,343

Additional Amount to Reconcile (+): 28,524

Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): 41,867

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Compl 991 Cluster Demo	RF-0387		9/29/2004		9/29/2004						
Complete PBD 021 - B991 Cluster Closure Project	RF-OTHE-21		11/17/2005		11/17/2005					Y	
PBD 021 Project Start			10/1/1997								

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Project RF021 / Building 991 Cluster Closure Project

Milestones															
Milestone/Activity				Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit		Intersit	e
Milestones - Part II															
Milestone/Activity		Field Mileston Code	e Critical Decision	Critial Closure Pat	Project h Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	e Canc	elled	Milestone 1	Description	1
Compl 991 Cluster Demo		RF-0387	Y										ser Hill Interna estones	l (KHIs)	
Complete PBD 021 - B991 C Closure Project	Cluster	RF-OTHE-21				Y	Y						ser Hill Interna estones	l (KHIs)	
PBD 021 Project Start					Y							PBI	D 021 Project S	tart	
Performance Measure Metrics															
Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998			nned P 2000	lanned 2001	Planned 1 2002	Planned 2003	Planne 200
RS															
Assess.	NR	4.00	0.00	4.00											4.0
RS															
Cleanup	NR	4.00	0.00	4.00											3.0
Fac.															
Decom Assess.	NF	14.00	0.00	14.00										14.00	
Fac.															
Decom- Cleanup	NF	14.00	0.00	14.00											14.(
Category/Subcategory	Unit	ts Planne 200			Planne 200				010 2	nned 011 - 2015	Planned 2016 - 2020	Planne 2021 202	- 2026	- 20	nned 031 - 2035

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Project RF021 / Building 991 Cluster Closure Project

Categor	y/Subca	tegory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Plann 20		anned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025			anned 2031 - 2035
RS																	
Assess	i .		NR	4.00													
RS																	
Clean	up		NR	3.00		1.00											
Fac.																	
Decon	ı Asses	s.	NF														
Fac.																	
Decon	ı- Clean	up	NF	14.00													
Categor	y/Subcat	tegory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	206	6 -	otions 1	Lifecycle Total				
RS																	
Assess	•		NR										4.00				
RS																	
Clean	up		NR										4.00				
Fac.																	
	ı Asses	s.	NF										14.00				
Fac. Decon	ı- Clean	пр	NF										14.00				
Release	Sites							D1 1	.		D						
Site Code	RSF ID	Change Flag	Description			Class/Su	bclass Name	Planned Assess. Year	Forecast Assess. Year	Actual Assess. Date	Planned Comp. Year	Forecast Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
RFTS	3139		IHSS 173 \ Rad	d Site B991		/		2004			2004				Y	Approved	l
RFTS	3149		IHSS 184 \ Rad	d Site 991 Ste	am	/		2004			2004				Y	Approved	
RFTS	3270		PAC 900-1301	\ Bldg 991 E	nclosed Area	/		2004			2004				Y	Approved	l

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Project RF021 / Building 991 Cluster Closure Project

Release	Sites				Planned	Forecast	Actual	Planned	Forecast	Actual	Acc.			
Site Code	RSF ID	Change Flag	Description	Class/Subclass Name	Assess. Year	Assess. Year	Assess. Date	Comp. Year	Comp. Year	Comp. Date	Year	No Action	Comp. Status	RAD
RFTS	3407		UBC B991 \	/	2004			2006				N		

Facility Decommissioning

Site Code	RSF ID	Change Description Flag	Class/Subclass	Hazard	Plan. Assess. Year	Fore. Assess. Year	Actual Assess. Date	Plan. Deac. Year	Fore. Deac. Year	Actual Deac. Date	Plan. Comp. Year	Fore. Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
RFTS	0084	991TUN \ TUNNELS BETWEEN 991 CLUSTER BLDGS	\		2003						2004				N		
RFTS	0397	984 \ SHIPPING CONTAINER STORAGE FACILITY	\		2003						2004				N		
RFTS	0398	985 \ FILTER PLENUM BUILDING (996,997,999)	\		2003						2004				N		
RFTS	0399	989 \ EMERGENCY GENERATOR BUILDING (991)	\		2003						2004				N		
RFTS	0400	991 \ PRODUCT WAREHOUSE	\		2003						2004				N		
RFTS	0401	996 \ STORAGE VAULT	\		2003						2004				N		
RFTS	0402	997 \ STORAGE VAULT	\		2003						2004				N		
RFTS	0403	998 \ STORAGE VAULT	\		2003						2004				N		
RFTS	0404	999 \ STORAGE VAULT	\		2003						2004				N		
RFTS	0405	Tank 149 \ LIQUID WASTE CHROMIUM STORAGE TANK (S of 991)	\		2003						2004				N		
RFTS	0406	Tank 150 \ GLYCOL STORAGE TANK (E of 989)	\		2003						2004				N		

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Project RF021 / Building 991 Cluster Closure Project

Facility Decommissioning

Site Code	RSF ID	Change Desc Flag	cription	Class/Subclass	Hazard	Plan. Assess. Year	Fore. Assess. Year	Actual Assess. Date	Plan. Deac. Year	Fore. Deac. Year	Actual Deac. Date	Plan. Comp. Year	Fore. Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
RFTS	0407	STO	k 151 \ UNDERGROUND DRAGE TANK (DIESEL) T 33) (foamed in place) (E 89)	\		2003						2004				N		
RFTS	0408		k 334 \ MET LAB WASTE TER STORAGE TANK (S 91)	\		2003						2004				N		
RFTS	0409	STO DIE	33 \ ABOVEGROUND DRAGE TANK (#2 SEL) (replacement for UST Tank 151) (E of 989)	\		2003						2004				N		

Technology Needs

Site Need Code: RF-DD01

Site Need Name: Improved Decommissioning Characterization for Distinguishing Between Transuranic and Low-Levels of Contamination

Focus Area Work Package ID: DD-13 Focus Area Work Package: Oversized Metallic TRU Waste Disposition

Focus Area: DDFA Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both):

Technologies Cost Savings (in thousands of dollars) Range of Estimate

Internal Duct Characterization System

Internal Duct Characterization System

Internal Duct Characterization System

Small Pipe Characterization System (SPCS)

Small Pipe Characterization System (SPCS)

Small Pipe Characterization System (SPCS)

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Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Pipe Explorer (TM) System

Pipe Explorer (TM) System

Pipe Explorer (TM) System

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Gamma Ray Imaging System

Gamma Ray Imaging System

Gamma Ray Imaging System

Pipe Crawler Internal Piping Characterization System

Pipe Crawler Internal Piping Characterization System

Pipe Crawler Internal Piping Characterization System

Gamma Cam (TM) Radiation Imaging System

Gamma Cam (TM) Radiation Imaging System

Gamma Cam (TM) Radiation Imaging System

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

In Situ Object Counting System

In Situ Object Counting System

In Situ Object Counting System

Decommissioning In-Situ Plutonium Inventory Monitor (DISPIM)

Decommissioning In-Situ Plutonium Inventory Monitor (DISPIM)

Decommissioning In-Situ Plutonium Inventory Monitor (DISPIM)

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Data Source: EM CDB Report Number: GEN-01b

Operations/Field Office: Rocky Flats

Print Date: 3/9/2000

Site Summary Level: Rocky Flats Environmental Technology Site HQ ID: 0365

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Electret Ion Chambers

Electret Ion Chambers

Electret Ion Chambers

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01385: ER-04 - D&D Waste (HAZ, LLW, MLLW, TRU/MTRU, Uncontam)	Y	N
	01388: ER-04C - Sorted D&D TRU	Y	N
	01389: ER-04D - Sorted D&D Uncontaminated to Disposal	Y	N
	01387: ER-04B - Sorted D&D LLM	Y	N

 01386: ER-04A - Sorted D&D LLW
 Y
 N

 01390: ER-04E - Sorted D&D HAZ to Disposal
 Y
 N

 01391: ER-04F - Sorted D&D to On Site Placement
 Y
 N

Site Need Code: RF-DD02

Site Need Name: High Speed, Integrated Characterization System for (1) Radioactive, (2) Hazardous, and (3) Toxic Contamination

Focus Area Work Package ID: DD-13 Focus Area Work Package: Oversized Metallic TRU Waste Disposition

Focus Area: DDFA Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both):

Technologies Cost Savings (in thousands of dollars) Range of Estimate

Three Dimensional, Integrated Characterization and Archiving System (3D-ICAS)

Three Dimensional, Integrated Characterization and Archiving System (3D-ICAS)

Three Dimensional, Integrated Characterization and Archiving System (3D-ICAS)

Gamma Ray Imaging System

Gamma Ray Imaging System

Gamma Ray Imaging System

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Operations/Field Office: Rocky Flats

Print Date: 3/9/2000

Site Summary Level: Rocky Flats Environmental Technology Site

HQ ID: 0365

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Mobile Automated Characterization System

Mobile Automated Characterization System

Mobile Automated Characterization System

Gamma Cam (TM) Radiation Imaging System

Gamma Cam (TM) Radiation Imaging System

Gamma Cam (TM) Radiation Imaging System

Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)

Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)

Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

In Situ Object Counting System

In Situ Object Counting System

In Situ Object Counting System

Decommissioning In-Situ Plutonium Inventory Monitor (DISPIM)

Decommissioning In-Situ Plutonium Inventory Monitor (DISPIM)

Decommissioning In-Situ Plutonium Inventory Monitor (DISPIM)

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Print Date: 3/9/2000

Site Summary Level: Rocky Flats Environmental Technology Site

HQ ID: 0365

01391: ER-04F - Sorted D&D to On Site Placement

Y

Ν

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01385: ER-04 - D&D Waste (HAZ, LLW, MLLW, TRU/MTRU, Uncontam)	Y	N
	01388: ER-04C - Sorted D&D TRU	Y	N
	01389: ER-04D - Sorted D&D Uncontaminated to Disposal	Y	N
	01387: ER-04B - Sorted D&D LLM	Y	N
	01386: ER-04A - Sorted D&D LLW	Y	N
	01390: ER-04E - Sorted D&D HAZ to Disposal	Y	N

Site Need Code: RF-DD03

Site Need Name: Improved Interior Airborne Particulates Control

Focus Area Work Package ID: DD-13 Focus Area Work Package: Oversized Metallic TRU Waste Disposition

Focus Area: DDFA Agree with Technology Link:

Benefits (Cost, Risk Reduction, Both):

Technologies Cost Savings (in thousands of dollars) Range of Estimate

Reactor Surface Contamination Stabilization

Reactor Surface Contamination Stabilization

Concrete Dust Supression System

Concrete Dust Supression System

Strippable Coatings and Fixatives

Strippable Coatings and Fixatives

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Operations/Field Office: Rocky Flats

Print Date: 3/9/2000

Site Summary Level: Rocky Flats Environmental Technology Site

HQ ID: 0365

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01385: ER-04 - D&D Waste (HAZ, LLW, MLLW, TRU/MTRU, Uncontam)	Y	N
	01388: ER-04C - Sorted D&D TRU	Y	N
	01389: ER-04D - Sorted D&D Uncontaminated to Disposal	Y	N
	01387: ER-04B - Sorted D&D LLM	Y	N
	01386: ER-04A - Sorted D&D LLW	Y	N
	01390: ER-04E - Sorted D&D HAZ to Disposal	Y	N
	01391: ER-04F - Sorted D&D to On Site Placement	Y	N

Site Need Code: RF-DD04

Site Need Name: Improved Measurement Techniques for Free Release of Property and Salvageable Equipment Contaminated with Radionuclides

Focus Area Work Package ID: DD-05 Focus Area Work Package: Material Recycle and Release

Focus Area: DDFA Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both):

Technologies Cost Savings (in thousands of dollars) Range of Estimate

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Operations/Field Office: Rocky Flats

Print Date: 3/9/2000

01391: ER-04F - Sorted D&D to On Site Placement

Y

Ν

Site Summary Level: Rocky Flats Environmental Technology Site

HQ ID: 0365

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01385: ER-04 - D&D Waste (HAZ, LLW, MLLW, TRU/MTRU, Uncontam)	Y	N
	01388: ER-04C - Sorted D&D TRU	Y	N
	01389: ER-04D - Sorted D&D Uncontaminated to Disposal	Y	N
	01387: ER-04B - Sorted D&D LLM	Y	N
	01386: ER-04A - Sorted D&D LLW	Y	N
	01390: ER-04E - Sorted D&D HAZ to Disposal	Y	N

Site Need Code: RF-DD08

Site Need Name: Improved Worker Protection Clothing and Systems

Focus Area Work Package ID: DD-12 Focus Area Work Package: D&D of Weapons Components Fabrication Facilities

Focus Area: DDFA Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both):

Technologies Cost Savings (in thousands of dollars) Range of Estimate

FRHAM-TEX Anti Contamination Suit

FRHAM-TEX Anti Contamination Suit

NuFab Anti Contamination Suit

NuFab Anti Contamination Suit

Personal Ice Cooling System (PICS)

Personal Ice Cooling System (PICS)

Sealed-Seam Sack Suit

Sealed-Seam Sack Suit

Wireless Remote Monitoring System

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Operations/Field Office: Rocky Flats

Print Date: 3/9/2000

01391: ER-04F - Sorted D&D to On Site Placement

Y

Ν

Site Summary Level: Rocky Flats Environmental Technology Site

HQ ID: 0365

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Wireless Remote Monitoring System

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	01385: ER-04 - D&D Waste (HAZ, LLW, MLLW, TRU/MTRU, Uncontam)	Y	N
	01388: ER-04C - Sorted D&D TRU	Y	N
	01389: ER-04D - Sorted D&D Uncontaminated to Disposal	Y	N
	01387: ER-04B - Sorted D&D LLM	Y	N
	01386: ER-04A - Sorted D&D LLW	Y	N
	01390: ER-04E - Sorted D&D HAZ to Disposal	Y	N

Site Need Code: RF-DD09

Site Need Name: Improved Decontamination of Porous Surfaces in Preparation for Building Demolition

Focus Area Work Package ID: DD-05 Focus Area Work Package: Material Recycle and Release

Focus Area: DDFA Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both):

Technologies Cost Savings (in thousands of dollars) Range of Estimate

Biodegradation of Concrete

Biodegradation of Concrete

Biodegradation of Concrete

2-D Linear Motion System

2-D Linear Motion System

2-D Linear Motion System

Rotary Peening with Captive Shot

Rotary Peening with Captive Shot

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Operations/Field Office: Rocky Flats

Print Date: 3/9/2000

Site Summary Level: Rocky Flats Environmental Technology Site

HQ ID: 0365

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Rotary Peening with Captive Shot

Centrifugal Shot Blast System

Centrifugal Shot Blast System

Centrifugal Shot Blast System

Concrete Shaver

Concrete Shaver

Concrete Shaver

Remotely Operated Scabbling

Remotely Operated Scabbling

Remotely Operated Scabbling

Related CCP Milestones

Related Waste Streams		Change?
01385: ER-04 - D&D Waste (HAZ, LLW, MLLW, TRU/MTRU, Uncontam)	Y	N
01388: ER-04C - Sorted D&D TRU	Y	N
01389: ER-04D - Sorted D&D Uncontaminated to Disposal	Y	N
01387: ER-04B - Sorted D&D LLM	Y	N
01386: ER-04A - Sorted D&D LLW	Y	N
01390: ER-04E - Sorted D&D HAZ to Disposal	Y	N
01391: ER-04F - Sorted D&D to On Site Placement	Y	N

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Operations/Field Office: Rocky Flats

Print Date: 3/9/2000

Site Summary Level: Rocky Flats Environmental Technology Site HQ ID: 0365

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Site Need Code: RF-DD10

Site Need Name: Improved Decontamination of Non-Porous Building Property and Structures

Focus Area Work Package ID: DD-13 Focus Area Work Package: Oversized Metallic TRU Waste Disposition

Focus Area: DDFA Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both):

Technologies Cost Savings (in thousands of dollars) Range of Estimate

Laser Surface Cleaning

Laser Surface Cleaning

Laser Surface Cleaning

CORPEX Nuclear Decontamination Process

CORPEX Nuclear Decontamination Process

CORPEX Nuclear Decontamination Process

Soda Blasting Decontamination Process

Soda Blasting Decontamination Process

Soda Blasting Decontamination Process

Laser Decontamination and Recycle of Metals

Laser Decontamination and Recycle of Metals

Laser Decontamination and Recycle of Metals

Removal of Contaminants from Equipment and Debris, and Waste Minimization Using TECHXTRACT

Removal of Contaminants from Equipment and Debris, and Waste Minimization Using TECHXTRACT

Removal of Contaminants from Equipment and Debris, and Waste Minimization Using TECHXTRACT

Portable Concentrator for Processing Plutonium Contaminated Solutions

Portable Concentrator for Processing Plutonium Contaminated Solutions

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Site Summary Level: Rocky Flats Environmental Technology Site

HQ ID: 0365

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Portable Concentrator for Processing Plutonium Contaminated Solutions

Steam Vacuum Cleaning

Steam Vacuum Cleaning

Steam Vacuum Cleaning

Soft Media Blast Cleaning

Soft Media Blast Cleaning

Soft Media Blast Cleaning

Advanced Recyclable Media System

Advanced Recyclable Media System

Advanced Recyclable Media System

Decontamination and Volume Reduction System (DVRS)

Decontamination and Volume Reduction System (DVRS)

Decontamination and Volume Reduction System (DVRS)

Related CCP Milestones

Related Waste Streams	Agree?	Change?
01385: ER-04 - D&D Waste (HAZ, LLW, MLLW, TRU/MTRU, Uncontam)	Y	N
01388: ER-04C - Sorted D&D TRU	Y	N
01389: ER-04D - Sorted D&D Uncontaminated to Disposal	Y	N
01387: ER-04B - Sorted D&D LLM	Y	N
01386: ER-04A - Sorted D&D LLW	Y	N
01390: ER-04E - Sorted D&D HAZ to Disposal	Y	N
01391: ER-04F - Sorted D&D to On Site Placement	Y	N

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Operations/Field Office: Rocky Flats

Print Date: 3/9/2000

Site Summary Level: Rocky Flats Environmental Technology Site HQ ID: 0365

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Site Need Code: RF-DD11

Site Need Name: Improved Size Reduction of Contaminated Equipment and Demolition Waste

Focus Area Work Package ID: NMFA-03 Focus Area Work Package: Untitled (pending title by FA)

Focus Area: PLUTOFA Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Both

Technologies Cost Savings (in thousands of dollars) Range of Estimate

Laser Cutting and Size Reduction

Laser Cutting and Size Reduction

Laser Cutting and Size Reduction

High Speed Clamshell Pipe Cutter

High Speed Clamshell Pipe Cutter

High Speed Clamshell Pipe Cutter

Oxy-Gasoline Torch

Oxy-Gasoline Torch

Oxy-Gasoline Torch

Self Contained Pipe Cutting Shear

Self Contained Pipe Cutting Shear

Self Contained Pipe Cutting Shear

Decontamination and Volume Reduction System (DVRS)

Decontamination and Volume Reduction System (DVRS)

Decontamination and Volume Reduction System (DVRS)

Hand Held Shear

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Site Summary Level: Rocky Flats Environmental Technology Site

HQ ID: 0365

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Hand Held Shear

Hand Held Shear

Innovative Size Reduction Nibblers

Innovative Size Reduction Nibblers

Innovative Size Reduction Nibblers

Innovative Size Reduction Shears

Innovative Size Reduction Shears

Innovative Size Reduction Shears

Related CCP Milestones	

Related Waste Streams	Agree?	<u>Change?</u>
01388: ER-04C - Sorted D&D TRU	Y	N
01389: ER-04D - Sorted D&D Uncontaminated to Disposal	Y	N
01387: ER-04B - Sorted D&D LLM	Y	N
01386: ER-04A - Sorted D&D LLW	Y	N
01390: ER-04E - Sorted D&D HAZ to Disposal	Y	N
01391: ER-04F - Sorted D&D to On Site Placement	Y	N
01385: ER-04 - D&D Waste (HAZ_LLW_MLLW_TRU/MTRU_Uncontam)	Y	N

Site Need Code: RF-IF01

Site Need Name: Improved Computer-Based Training Platforms

Focus Area Work Package ID: Focus Area Work Package:

Focus Area: Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both):

Technologies Cost Savings (in thousands of dollars) Range of Estimate

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Operations/Field Office: Rocky Flats

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Site Summary Level: Rocky Flats Environmental Technology Site

HQ ID: 0365

Project RF021 / Building 991 Cluster Closure Project

Technology Needs

Site Need Code: RF-WM12

Site Need Name: Bulk Debris Characterization Techniques

Focus Area Work Package ID: MW-01 Focus Area Work Package: Nondestructive Characterization for Treatment, Transportation, and Disposal of

MLL and MTRU Waste.

Focus Area: MWFA Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both):

Technologies Cost Savings (in thousands of dollars) Range of Estimate

Related CCP Milestones Related Waste Streams Agree? Change?

01385: ER-04 - D&D Waste (HAZ, LLW, MLLW, TRU/MTRU, Uncontam) Y N

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